

PANAMA: Barro Colorado Island, Canal Zone, near Pearson Trail, *W. N. Bangham*, no. 578, September 8, 1929 (Herb. Field Mus. No. 604, 411, type; duplicate in herb. Arnold Arb.).

The genus is new to the Canal Zone flora, and, indeed, very few *Saurauias* grow at so low an elevation. The present species is easy of recognition because of its small glabrous leaves. It is named for Mr. James Zetek, whose work in establishing the laboratory on Barro Colorado Island has been so eminently successful.

CLUSIACEAE

Clusia odorata Seem. F. L. Island, *Bangham*, nos. 588, 577. A large shrub with pink flowers. This species probably includes all or most of the material reported from Panama as *C. minor* L.

FLACOURTIACEAE

Casearia javitensis HBK. F. L. Island, *Bangham*, no. 587; lake shore south of the laboratory, *Bangham*, no. 443. A shrub or small tree with small white flowers and red fruits. Called "maúro" in Chiriquí, Panama.

PASSIFLORACEAE

Passiflora ambigua Hemsl. Lake shore south of the laboratory, *Bangham*, no. 466.

RHIZOPHORACEAE

Cassipourea podantha Standl. Lake shore, *Bangham*, nos. 566, 416. A tree 8–10 m. high. The species has not been reported from the Canal Zone, but probably it includes a large part of the material previously referred to *C. elliptica* Poir.

COMBRETACEAE

Combretum coccineum (Aubl.) Engl. & Diels. Between Drayton and Armour cabins, *Bangham*, no. 527. A large woody vine with large dense spikes of fiery red flowers, extremely showy and handsome when in blossom.

MYRTACEAE

Myrcia gatunensis Standley in Field Mus. Bot. 4: 154. 1929. The type was collected on Barro Colorado by Professor L. A. Kenoyer. The following new collections may be reported: Barbour Point to the next point south, *Bangham*, no. 498; lake shore south of the laboratory, *Bangham*, no. 451. A shrub about 3 m. high with white flowers.

Eugenia Banghamii, sp. nov.

Frutex 3-metralis, ramulis gracilibus subteretibus ferrugineo-brunneis glabratis, internodiis 1–2.5 cm. longis. Folia breviter petiolata opposita, petiolo crassiusculo 3–4 mm. longo dense breviterque pilosulo; lamina coriaceo-membracea, oblongo-elliptica, 8–10 cm. longa, 3–5 cm. lata, abrupte breviterque acuminata, acumine triangulari obtuso, basi obtusa

vel acutiuscula, supra viridis, epunctata, ubique dense minuteque velutino-pilosula, costa gracillima prominula, venis obscuris, subtus fere concolor, dense velutino-pilosula et pilis patentibus plus minusve intertextis, costa gracili elevata, nervis lateralibus utroque latere circa 9, angulo acuto adscendentibus, fere rectis, remote a margine conjunctis. Flores pauci ad axillas fasciculati, sessiles vel brevissime pedicellati, pedicellis usque ad 1 mm. longis; calyx 3 mm. latus, sepalis 4 rotundatis ciliolatis; baccae immaturae globosae, 3-4 mm. diam., densissime grosseque punctatae, glabrae, calyce persistente coronatae; cetera ignota.

PANAMA: Barro Colorado Island, Canal Zone, on shores of Gatún Lake south of the laboratory, *W. N. Bangham*, no. 448, August 28, 1929 (Herb. Field Mus. No. 604, 410, type; duplicate in herb. Arnold Arb.).

Although only scanty material is available for study, it seems to represent a clearly distinct species of this genus, notable for the abundant soft spreading pubescence of the leaves, and for the sessile or subsessile flowers.

***Eugenia melanosticta*, sp. nov.**

Arbor 4-6-metralis, omnino glabra, ramulis crassiusculis, vetustioribus teretibus pallide cinnamomeis, novellis subcompressis albidis vel ochraceis undique glandulis magnis ovalibus nigris dense notatis, internodiis plerumque 2-3.5 cm. longis. Folia breviter petiolata, opposita, petiolo crassiusculo 5-7 mm. longo supra sulcato; lamina coriacea, oblonga vel anguste elliptico-oblonga, 8-12 cm. longa, 3.5-4.5 cm. lata, breviter acuteque acuminata, basi acuta vel acutiuscula et brevissime decurrens, fere concolor, supra minutissime impresso-puncticulata, costa profunde impressa, venis obsoletis, subtus dense elevato-puncticulata, costa gracili elevata, venis obscuris. Inflorescentiae axillares solitariae, subracemosae, laxae pauciflorae, 1-2.5 cm. longe pedunculatae, pedicellis crassis 4-7 mm. longis; fructus basi bibracteolatus, bracteolis c. 1 mm. longis rotundatis; bacca globoso-ovalis, 10-12 mm. longa, 8-9 mm. lata, basi et apice rotundata, calyce persistente coronata, densissime tuberculato-glandulosa; calyx 4.5 mm. latus, 5-lobus, lobis late rotundatis brevissimis.

PANAMA: Barro Colorado Island, Canal Zone, Shores of Gatún Lake south of the laboratory, *W. N. Bangham*, no. 445, August 28, 1929 (Herb. Field Mus. No. 606, 247, type; duplicate in herb. Arnold Arb.); east shore of Barro Colorado Island, *F. M. Salvoza*, no. 909, August 28, 1929.

The material of this tree available for study is rather unsatisfactory, but it seems better referable to *Eugenia* than to any other group known from Central America, and it is perhaps worth while to give it a name in order to bring it to the attention of future students. The species is noteworthy for the very numerous and conspicuous black glands of the young branchlets.

MELASTOMACEAE

Miconia minutiflora (H. & B.) DC. Barbour Point to the next point south, *Bangham*, no. 486. A shrub or small tree about 5 m. high, with small white flowers.

SAPOTACEAE

Lucuma glabrifolia Pittier? North shore near the end of Pearson Trail, Salvoza, no. 999. A tree 10 m. high with milky sap and a large, yellowish green fruit. The determination is very uncertain, because of the absence of flowers, and the tree may well represent an undescribed species.

APOCYNACEAE

Echites microcalyx A. DC. Barbour Point to the next point south, Bangham, no. 494. A slender vine; corolla yellow with red throat.

Echites trifida Jacq. On shore at the end of the island, Bangham, no. 573. A vine with greenish yellow flowers.

Prestonia macrocarpa Hemsl. Shore of the lake south of the laboratory, Bangham, no. 467; shore at the end of the island, Bangham, no. 569. A large woody vine.

CONVOLVULACEAE

Aniseia martinicensis (Jacq.) Choisy. F. L. Island, Bangham, no. 589. An herbaceous vine with narrow oblong obtuse leaves; corolla white.

VERBENACEAE

Aegiphila cephalophora Standley in Field Mus. Bot. 4: 156. 1929. Type collected on Barro Colorado by Professor Leslie A. Kenoyer. Another collection may now be reported: Armour Cabin to the second bay north, Bangham, no. 543x.

SOLANACEAE

Solanum Hayesii Fernald. Between Drayton and Armour cabins, Bangham, no. 514; Drayton Cabin to the second point north, Bangham, no. 501. A prickly tree about 7 m. high with white flowers. The species is known only from the Canal Zone.

***Markea panamensis*, sp. nov.**

Frutex scandens, ramulis crassiusculis ochraceis vel brunnescentibus subteretibus, internodiis plerumque elongatis, floriferis vulgo dense foliatis vel cicatricibus foliorum delapsorum dense notatis. Folia breviter petiolata, alterna vel subopposita, petiolo crassiusculo 7–13 mm. longo glabro supra sulcato; lamina pergamentacea, oblanceolato-oblonga vel obovato-oblonga, 8–14 cm. longa, 3–4 cm. lata, acuta et abrupte cuspidato-acuminata, acumine angusto attenuato, versus basin acutam vel acuminatam sensim angustata, utrinque glabra, integra, costa nervisque supra vix elevatis inconspicuis, subtus paullo pallidior, costa gracili elevata, nervis lateralibus utroque latere circa 7, angulo acuto latove adscendentibus, gracillimis, prominulis, margine saepe subrevoluto. Flores ad apices ramulorum fasciculati vel breviter racemosi, pedicellis gracilibus 5–10 mm. longis furfuraceo-puberulis vel glabratis; calyx viridis fere ad basin 5-fidus, laciniis oblongis 5–9 mm. longis acutiusculis vel obtusis sparse minuteque puberulis 3-nerviis; corolla lutea infundibuliformis, 1.5 cm. longa, extus minutissime

puberula, 5-nervia, tubo 4 mm. longo 1.2 mm. crasso, fauce 7 mm. longa, ore 6 mm. lata, lobis 5 ovali-ovatis fauce paullo brevioribus obtusis. Bacca immatura ovoidea, 13 mm. longa.

PANAMA: Barro Colorado Island, Canal Zone, Armour House to the second bay north, *W. N. Bangham*, no. 543, September 3, 1929 (Herb. Field Mus. No. 604,412, type; duplicate in herb. Arnold Arb.). Along the Sambú River, southern Darién, at sea level, *H. Pittier*, no. 5566, February, 1912.

The plant is noteworthy in the genus for its very small flowers. It could be referred equally well, probably, to the genus *Merinthopodium* Donn. Smith, whose distinctness from *Markea* is open to question.

BIGNONIACEAE

Anemopaegma punctulatum Pitt. & Standl. Across the bay from Drayton Cabin, *Bangham*, no. 544; also *Wetmore & Woodworth*, no. 40. A large woody vine with showy yellow flowers.

Arrabidaea panamensis Sprague. Shore of the lake south of the laboratory, *Bangham*, no. 449. A woody vine with small, pale lavender flowers.

***Petastoma breviflorum*, sp. nov.**

Frutex scandens, ramis gracilibus teretibus ochraceis striatis lenticellis paucis parvis elevatis conspersis, novellis sparse pilosulis cito glabratis, internodiis elongatis. Folia bifoliolata, opposita, 8–14 mm. longe petiolata, petiolo gracili dense breviterque piloso, petiolulis 8–15 mm. longis gracilibus pilosis; foliola late elliptica, 6.5–9.5 cm. longa, 3–6.5 cm. lata, abrupte acuta vel acuminata, acumine triangulari vel anguste triangulari attenuato acuto vel obtuso, basi obtusa vel rotundata, crasse membranacea, fere concoloria, luteo-viridia, supra glabra, sparse et minutissime pallido-puncticulata, nervis prominulis, subtus ubique sed praesertim ad venas pilis mollibus albidis sparse pilosa, costa nervisque elevatis, nervulis prominulis et reticulatis. Paniculae terminales subdense multiflorae foliis vix longiores, ramulis gracilibus dense breviterque pilosis, floribus graciliter pedicellatis; calyx extus sparse puberulus vel fere glaber, 5 mm. longus et aequilatus, parte inferiore turbinata, limbo patelliformi remote obscureque denticulata; corolla purpurea, tubo 5–6 mm. longo gracili tereti 2 mm. crasso extus glabro, fauce campanulata 6 mm. longa ore circa 8 mm. lata extus glabra, lobis subaequalibus ovalibus 6 mm. longis apice rotundatis extus et intus densissime puberulo-tomentosis; stylus gracilis glaber. Capsula immatura linearis compressa, 26 cm. longa et ultra, 8 mm. lata, glabra, basin versus paullo angustata.

PANAMA: Barro Colorado Island, Shores of Gatún Lake, south of the Laboratory, *W. N. Bangham*, no. 465 in part, August 28, 1929 (Herb. Field Mus. no. 604,413, type); lake shore near the laboratory, *W. N. Bangham*, no. 553, September 3, 1929 (Herb. Arnold Arb.).

Bangham no. 465, as represented in the herbarium of Field Museum, consists of a mixture of two quite distinct plants. The flowering specimens are *Arrabidaea panamensis* Sprague, while the specimens with young fruit belong to the species here described.

Petastoma breviflorum is evidently an ally of *P. patelliferum*, having the same peculiarly distributed pubescence on the corolla, but the flowers of *P. breviflorum* are very much smaller than those of the latter species.

RUBIACEAE

Amaioua corymbosa HBK. Shore of the lake south of the laboratory, *Bangham*, no. 456. A shrub with fleshy red fruits.

Genipa americana L. Near Drayton Cabin, *Bangham*, no. 503. In this species the leaves are glabrous, while in *G. caruto* HBK., which also grows on Barro Colorado, they are densely pubescent beneath. I am now inclined to believe that these two forms represent distinct species.

Hamelia axillaris Sw. Between Wheeler and Shannon trails, *Bangham*, no. 472.

CUCURBITACEAE

Gurania coccinea Cogn. Collected by *S. W. Frost*, no. 229. An herbaceous vine with showy red flowers, Called "bien-te-veo" in some parts of Panama.

COMPOSITAE

Elephantopus mollis HBK. Collected by *S. W. Frost*, no. 286. A low herb with clustered heads of white or purple flowers; leaves mostly basal.

Mikania guaco H. & B. F. L. Island, *Bangham*, no. 597. An herbaceous vine with small heads of white flowers.

FIELD MUSEUM OF NATURAL HISTORY

CHICAGO

RHADINOPUS, A PRESUMED NEW GENUS OF RUBIACEAE FROM NEW GUINEA

S. MOORE

With a figure

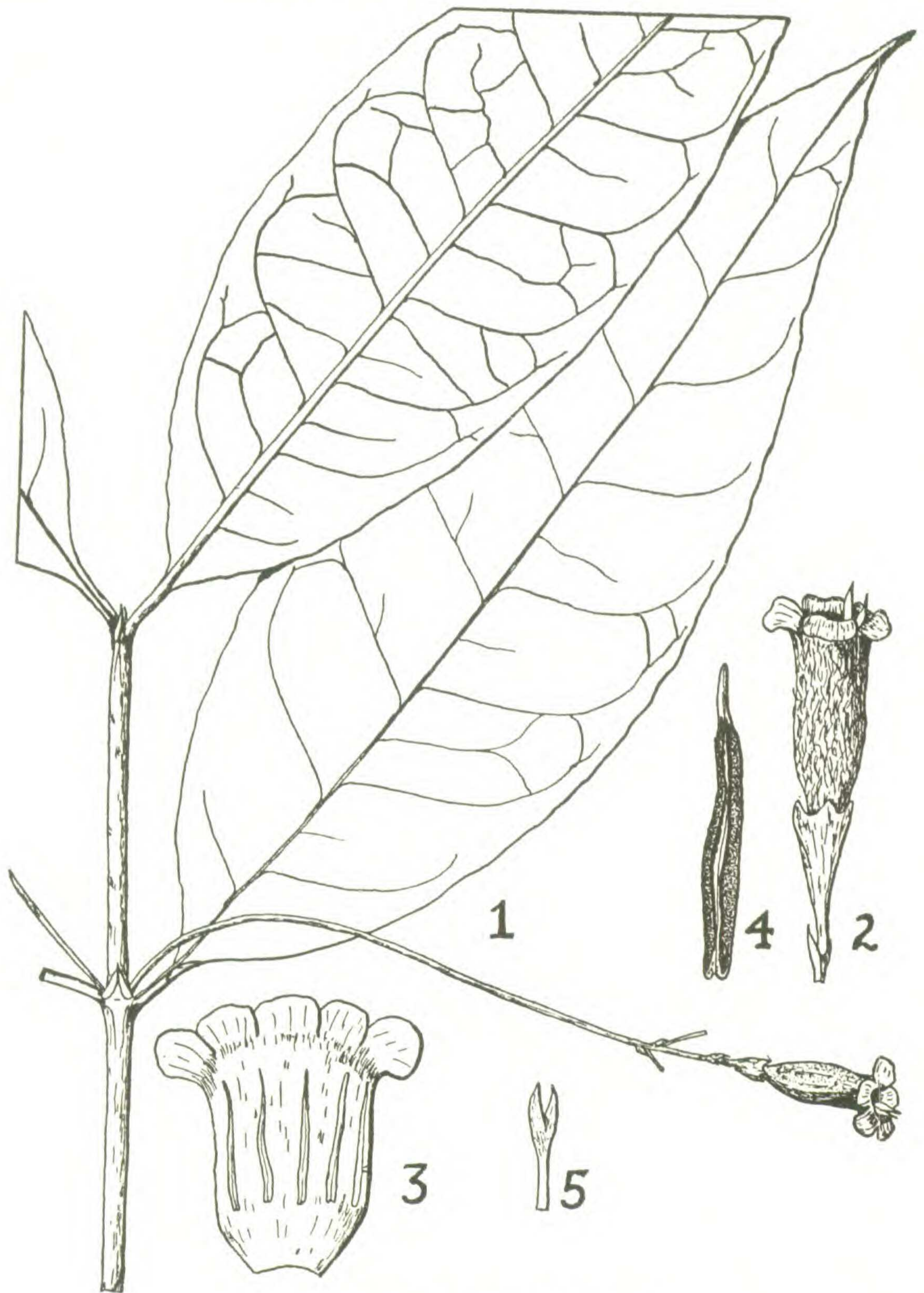
Rhadinopus,¹ gen. nov.

Calycis tubus obconicus; limbus cupularis, 5-denticulatus. Corollae calycem facile superantis tubus ima basi contractus, inde late cylindricus, faucibus glabris; limbus 5-lobus, lobis tubo plane brevioribus, patentibus, aestivatione contortis. Stamina 5, paullo infra medium tubum corollae inserta; antherae dorsifixae, sessiles, inclusae. Discus annularis. Ovarium 1-loculare; stylus crassus, complanatus, sursum biramosus, brevissime exsertus; ovula plura, placentis 2 parietalibus affixa. Bacca globosa, carnosa, verisimiliter oligosperma.—Frutex glaber, fere humanae altitudinis. Folia ampla, opposita, pergamacea. Stipulae basi connatae, diutule persistentes. Flores inter minores, fortasse nonnunquam solitarii, verisimiliter plerumque in cymas perpaucifloras pedunculum elongatum patentem bracteis parvulis raris indutum coronantes digesti.

Rhadinopus papuanus, sp. unica.

Ramulis tetragonis, subdistanter foliosis; foliis oblongo-ovatis, breviter acuminatis, basi obtusis, pagina superiore nitidulis pagina utraque sparsim pustulatis, nervis utrinque circa 8, mediocriter visibilibus, 10–12 × 4–5.5 cm.; petiolis canaliculatis, fere 1 cm. longis; stipulis triangularibus, acutis

¹ ῥαδινός, slender, and πούς, foot or foot-stalk.



RHADINOPUS PAPUANA S. Moore

1. Flowering branch (nat. size).—2. Flower ($\times 2$).—3. Corolla laid open ($\times 2$).—4. Anther ($\times 3$).—5. Stigma ($\times 2$).

vel caudato-acuminatis, circa 5 mm. longis; pedunculis paullulum supra-axillaribus gracilibus 7–8 cm. longis; calycis tubo tetragono 3.5 mm. longo, limbo 1.5 mm. longo; corollae albae tubo intus sparsim papilloso 13×6

mm., lobis late ovatis 5 mm. longis; antheris linearibus, apice lamina lineari-lanceolata acuta terminatis, 8 mm. longis; stylo apice leviter dilatato, glabro, 14 mm. longo, hujus ramis erectis, 2 mm. longis; bacca viva viridi, 12 mm. diametiente.

BRITISH NEW GUINEA: Owen Stanley Range between Mts. Brown and Clarence, alt. 900 m., *L. J. Brass*, no. 1495, May 1926 (bush 5 ft. high; flowers white, on long axillary peduncles; fruit globose, fleshy, pale green). Type in the herbarium of the Arnold Arboretum.

The genus is near *Gardenia* and several of the genera associated with it. From *Gardenia* it differs chiefly in its small flowers, stamens inserted below the middle of the corolla-tube not in its throat, and the 2-armed stigma; from *Nargedia* in the glabrous corolla-mouth, included stamens, 1-celled ovary and in the inflorescence. The glabrous corolla-mouth and the bilobed, not entire and densely hairy stigma separates it from *Villarea*. Among other genera *Hypobathrum* with its short, axillary inflorescences, its densely hairy corolla-throat, 2-celled ovary and hispid style-arms may be mentioned, as also *Petunga* in which we have spicate inflorescences, and a 2-celled ovary with ovules pendulous from the top of the cells.

There being only a single flower on the specimen, great care has been necessary in order to leave the remains after dissection as little damaged as possible. This has made a longitudinal section of the ovary inadvisable, so that some doubt remains as to the precise number and disposition of the ovules. As regards the inflorescence, there are indications of branching at the top of the long and slender peduncles, and this would seem to indicate a few-flowered cyme to be the rule as is indicated in the description.

BRITISH MUSEUM (NATURAL HISTORY)
LONDON

NOTES

Additions to the Library.—Mr. FREDERIC A. DELANO has presented to the Library the most unique gift of recent years, to serve as a memorial to his father Warren Delano, 1809–1898, with the purpose of making it “of real value to students.”

It consists of six hundred and eleven paintings of Chinese fruits, flowers and vegetables, natural size, beautifully executed by native artists on sheets 15" × 19". Some of them are of well-known plants that have been introduced into this country such as the Rose, Peony, Chrysanthemum, Camellia, etc., but many of them are very rare. In his presentation letter Mr. Delano writes, “My Father, Warren Delano, was one of the early Boston merchants engaged in the China trade—and went there in 1835. He lived in China for more than 20 years, between 1835 and 1866, chiefly in Canton, Macao and Hong Kong connected with the House of Russell & Co. During his stay he endeavored to learn about the products of the country and in the 40's he collected and had drawn by Chinese artists over 500 paintings of 200 or more fruits, flowers and vegetables.”

These paintings are replete with interest, botanical, artistic, and historical. They were apparently done by various artists with varying degrees of skill over a period of years. The paper on which they were painted is evidently of English manufacture, the earliest water-marks being "I. Taylor 1794" and "E. & P. 1794", and the latest "Ruse & Turners 1832." Between these are various other dates, many of which bear the name of J. Whatman, and in 1828, "J. Whatman, Turkey Mill" with design resembling a coat-of-arms.

The paintings are exquisitely drawn, in beautiful colors marvelously preserved, with details of fruit and flower, some bearing both on the same plant. Occasionally two plants are figured on the same sheet.

There are 34 paintings of Orchids and a large collection of Camellias.

The names are given in Chinese, with English transliteration and translations which have a quaintness and a flavor of their own, such as:—*Hemerocallis flava* (tah e kwan kin—undressed changed to silk), *Michelia fuscata* (nan seaou hwa—repressed smile flower), *Hovenia dulcis* (wan tsze kwo—fruit like the letter wan), *Dolichos* (kwo shan chun—passing hill stopping), *Thunbergia grandiflora* (shan kien new—hill leading cow), *Nicotiana tabacum* (yen pwa—smoke flower!), *Impatiens chinensis* (kwo tang shay—passing pool snake), *Plumbago rosea* (yen lae hung—wild-goose comes red), *Asclepias curassavica* (ma le kin—horse's tongue string), *Clematis chinensis* (wei ling sien—dreading spirit genii), *Lycoris sanguinea* (kang e tsaou—changing dress herb), *Abrus precatorius* (hung siang sze—red causing thought), *Murraya exotica* (kew le heang—nine mile fragrance), *Rosa Banksiae lutescens* (muh heang hwa—wooden fragrance flower), *Plumbago zeylanica* (che tau po—viscous head old woman) and *Sapindus mukorossi* (woo hwan tsze—without sorrow seeds). In most cases botanical names were also given and to these have been added further identifications.

The paintings were presented in two large mahogany boxes fashioned in the likeness of books, in which the elder Mr. Delano had preserved them.

Mr. Delano's gift is of especial value as it adds a new importance to our already unusual collection of material on Chinese botany and travels, a collection unsurpassed in this country.

Mrs. SUSAN DELANO McKELVEY has again placed the Library in her debt by the gift of a most unusual collection of beautiful photographs taken by her in Arizona from January to June 1929.

They represent a variety of woody subjects including a large number of photographs of Agaves and of the Cactaceae family of which Mrs. McKelvey has made an intensive study.

The photographs, marvelously clear, showing patience and skill, are enlightening as to the wonderful beauty of the desert plants at their best, and are a priceless addition to the Library's collection.

Miss VIOLET F. EDLMANN has presented a large number of valuable tree photographs taken in Arizona, January to February, 1929.

Mrs. L. A. FROTHINGHAM has presented to the Library the fifth and

concluding volume of MARY A. WALCOTT's beautiful colored plates "North American Wild Flowers."

Mr. E. H. WILSON has presented his latest volume of garden classics "Aristocrats of the Trees"¹ published by the Stratford Company, attractively bound and beautifully illustrated with photographs of trees in every land. The book is a fine combining of accurate scientific knowledge and historical and aesthetic treatment in most readable form.

A general introduction to trees, the physiology of root and bark, esthetic beauty, and economic and vital importance to the life of man, with a word on the history and significance of Arbor Day, is followed by chapters on individual trees and groups of trees.

A short chapter is devoted to "Pleached Alleys," rare in this country, and about which little has been written.

Mr. Wilson's intimate knowledge of trees is gained through extensive travel, and for his photographs he has drawn largely upon the Library's collection without which he states the work would have been impossible in its present form.

He has also presented for the photograph collection a copy of the frontispiece of "Aristocrats of the Trees," a remarkably fine reproduction in color of a beautiful painting, "Maple Woods in Autumn, Lake Chuzenji, Japan" by the Japanese artist S. Ishida.

After years of patient effort the Library has acquired by purchase JOSIAH CONDER's "Landscape Gardening in Japan" with its quaint, idealistic Japanese drawings, and text giving an "exposition of the rules and theories of the art of landscape gardening in Japan, as followed from ancient to modern times, so far as they can be gathered from a thorough study of native authorities, added to personal observation of the best remaining examples"; also his "Supplement to Landscape Gardening in Japan," illustrated with photographs of existing gardens, which the author states, "are but imperfect and fragmentary examples of a craft comparatively neglected in recent days."—E. M. T.

Notes from the Herbarium.—During the last months the ligneous plants collected by W. P. Fang in Szechuan for this institution and the Science Society of China amounting to about 1500 numbers have been identified; the collection contained many species not yet recorded from Szechuan and a number of new species and varieties which will be described in this Journal. The herbaceous plants, more than 2000 numbers, are being determined at Edinburgh.

The plants collected by S. F. Kajewski during 1928–1929 in the New Hebrides for this institution and the California Botanic Garden have now been all received and most of them have been sent on to Dr. A. Guillaumin of Paris, who has kindly consented to determine this collection with the exception of some groups which have been sent to specialists.

¹ WILSON, ERNEST H. *Aristocrats of the trees*. With frontispiece and sixty-six plates. f. (2) + xxi + 279 pp. The Stratford Company, Boston [Cop. 1930].

The whole collection comprises about 900 numbers with many duplicates. Mr. S. F. Kajewski has by this time left Australia for the Solomon Islands where he will collect during the year for this institution and the Bishop Museum in Honolulu.

Mr. F. M. Salvoza of the School of Forestry, University of the Philippines, Los Banos, Laguna, Philippine Islands has nearly finished his monograph of *Rhizophora* forming his thesis for the Ph.D. degree on which he has been working in the herbarium since last year.

Mr. Chien Pei of Chengtu, Szechuan province, China has spent two weeks in the herbarium in connection with a revision of the Chinese *Verbenaceae* which he is preparing as his theses for the Ph.D. degree.



THUJA ORIENTALIS L.
Tree in Chungsan Park, Peking